Response to Office Action of March 22, 2007

Docket No: 1020-01-PCT-PA

## Amendments to the Claims:

The following listing the claims replaces all previous listings and versions of the claims in this application.

## Listing of the Claims:

(Currently Amended) Single-step Δ process for the preparation of lower α -alkene
polymerization heterogeneous solid catalyst, comprising mixing an organomagnesium
precursor derived procatalyst having eomprising magnesium chloride supported titanium
chloride and an internal electron donor with [[and]] an organoaluminum compound
based cocatalyst[[,1]]:

wherein the mole ratio of aluminum in the cocatalyst to titanium in the procatalyst is 10-3000:1, and the procatalyst is obtained by single step reaction of the organomagnesium precursor [[and]] with titanium tetrahalide or titanium haloalkoxo species of the formula Ti(OR)m Xn, wherein R is selected from the group consisting of methyl, ethyl, normal propyl, isopropyl, normal butyl, and isobutyl, X is selected from the group consisting of chlorine and bromine, and m+n=4 with the condition that when m=1 to 4, n=3 to 0 respectively, with a hydrocarbon or halohydrocarbon solvent and internal electron donor and optionally an acid halide under microwave irradiation of 300 to 1200 W followed by isolating the procatalyst, the mole ratio of the organomagnesium precursor to the titanium tetrachloride or titanium haloalko species being 1:6 to 1:20 and the mole ratios of the electron donor and acid halide to titanium being 0.3 to 1.5 and 0.02 to 0.2, respectively.

- (Currently Amended) Single-step The process as claimed in claim 1, wherein the organomagnesium precursor is magnesium ethoxide.
- (Currently Amended) Single-step The process as claimed in claim 1, wherein the mole ratio of the organomagnesium precursor to the titanium tetrachloride or titanium haloalkoxo species is 1:13.

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4. (Currently Amended) Single step The process as claimed in claim 1, wherein the

titanium tetrahalide is titanium tetrachloride.

5. (Currently Amended) Single-step  $\underline{\text{The}}$  process as claimed in claim 1, wherein the mole

ratio of aluminum in the cocatalyst to titanium in the procatalyst is 200:1.

6. (Currently Amended) Single-step The process as claimed in claim 1, wherein the

solvent is chlorobenzene.

7. (Currently Amended) Single-step The process as claimed in claim 1, wherein the

microwave radiation of 300 W is applied.

8. (Currently Amended) Single step The process as claimed in claim 1, wherein the

aluminum compound is triethyl aluminum.

9. (Currently Amended) Single-step The process as claimed in claim 1, wherein the

molar ratios of the electron donor and acid halide, if any, to titanium are 0.7 and 0.07

respectively.

10. (Currently Amended) Single-step  $\underline{\text{The}}$  process as claimed in claim 1, wherein the

electron donor is selected from the group consisting of ethyl benzoate, dibutyl and

diisobutyl phthalate.

11. (Currently Amended) Single step The process as claimed in claim 1, wherein the acid

halide is benzoyl chloride.

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12. (Canceled)

13. (Currently Amended) Single step ∆ process for the preparation of polypropylene polymerization heterogeneous solid catalyst, comprising mixing an organomagnesium precursor derived procatalyst emprising having magnesium chloride supported titanium

chloride and an internal electron donor with [[and]] an aluminum compound based

cocatalyst and a selectivity control agent[[,]];

wherein the mole ratio of aluminum in the cocatalyst to titanium in the procatalyst is 10-3000:1 and the mole ratio of selectivity control agent to titanium is 10-100:1; and the procatalyst is obtained by single step reaction of organomagnesium precursor and titanium tetrahalide or titanium haloalkoxo species of the formula Ti(OR)m Xn, wherein R is selected from the group consisting of methyl, ethyl, normal propyl, isopropyl, normal butyl, and isobutyl, X is selected from the group consisting of chlorine and bromine, m=0 and n=4 with a hydrocarbon or halohydrocarbon solvent and an internal electron donor and optionally an acid halide under microwave irradiation of 300 to 1200 W followed by isolating the procatalyst, the mole ratio of the organomagnesium precursor to the titanium tetrachloride or titanium haloalko species being 1:6 to 1:20 and the mole ratios of the electron donor and acid halide to titanium being 0.3 to 1.5 and 0.02 to 0.2 respectively.

14. (Currently Amended) Single-step The process as claimed in claim 13, wherein the organomagnesium precursor is magnesium ethoxide.

15. (Currently Amended) Single-step The process as claimed in claim 13, wherein the mole ratio of the organomagnesium precursor to the titanium tetrachloride or titanium haloalkoxo species is 1:13.

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16. . (Currently Amended) Single step The process as claimed in claim 13, wherein the

titanium tetrahalide is titanium tetrachloride.

17. . (Currently Amended) Single-step The process as claimed in claim 13, wherein the

mole ratio of aluminum in the cocatalyst to titanium in the procatalyst is 200:1.

18. . (Currently Amended) Single-step The process as claimed in claim 13, wherein the

solvent is chlorobenzene.

19. (Currently Amended) Single-step The process as claimed in claim 13, wherein the

microwave radiation of 300 W is applied.

20. (Currently Amended) Single step The process as claimed in claim 13, wherein the

organoaluminum compound is triethyl aluminum.

21. (Currently Amended) Single step The process as claimed in claim 13, wherein the

selectivity control agent is selected from the group consisting of p-ethoxy ethyl benzoate,

dicyclohexyl dimethoxy silane and diphenyl dimethoxy silane.

22. (Currently Amended) Single step The process as claimed in claim 13, wherein the

mole ratio of the selectivity control agent to titanium is 10-75:1.

23. (Currently Amended) Single step The process as claimed in claim 13, wherein the

molar ratios of electron donor and acid halide, if any to titanium are 0.7 and 0.07,

respectively.

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24. (Currently Amended) Single-step The process as claimed in claim 13, wherein the electron donor is selected from the group consisting of ethyl benzoate, dibutyl phthalate, and diisobutyl phthalate.

- 25. (Currently Amended) Single-step <u>The</u> process as claimed in claim 13, wherein the acid halide is benzoyl chloride.
- 26. (Canceled)
- 27. (Canceled)